

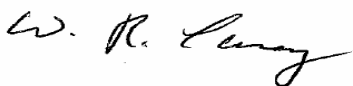
**NSLS GENERIC PERMIT FOR WORKING ON OR NEAR ENERGIZED
CONDUCTORS FOR “LOTO ZERO ENERGY VERIFICATION” IN THE
FOLLOWING RANGES:**

**50 < (Vac rms) ≤ 240 & ≥ 10 mA rms available current; or
50 < (Vdc) ≤ 750 & ≥ 60 mA available current; or
Sources capable of an instantaneous release of ≥10 J of energy**

Permit Valid for the Period: 07/01/2006 through 06/30/2007

Instructions:

1. This Permit shall be used consistent with the requirements of BNL ESH Standards 1.5.0 & 1.5.1, NSLS PRM 1.5.0 & 1.5.1, and applicable group LOTO procedures.
2. Supervisors shall record the names on the attached form of the personnel authorized to perform the work defined in this permit.
3. Supervisors shall retain the permit and send a copy to the NSLS Electrical Safety Officer.
4. This permit is valid only during the time period specified above and must be renewed on an annual basis by the supervisor.

Work Location:	NSLS Complex		
Description:	LOTO zero energy verification on systems in the above listed ranges that worker is authorized to work on.		
Justification:	Perform zero energy verification to place equipment in a safe state for maintenance, repair, and installation.		
Hazard Description:	Exposure to energized electrical terminals and components may result in electrical shock, arc flash, burns, and/or damage to circuitry.		
Required PPE and Tools:	Natural fiber undergarments, fire-rated long-sleeve shirts, fire-rated long pants, hardhat with arc rated face shield: BNL # K64942, non-conductive safety glasses, voltage rated gloves and leather gloves, leather work shoes, hearing protection, voltage rated tools, and category III or IV multimeter. (All FR clothes must be Arc Rated at ≥ 8 Cal/cm ²)		
Flash Protection Boundary: 4' 0"	Limited Approach Boundary: 3' 6"	Restricted Approach Boundary: 0' 1"	Prohibited Approach Boundary: Avoid Contact
Department Chair (or designee) Approval:			Date: 06/28/2006
ESO Comments:			
Worker Feedback			

Authorized Personnel

The following persons are authorized to perform the work described above subject to the requirements established in their training and qualification program:

Name (print)	Signature	Life Number
Supervisor or Local Contact Approval:		Date:

General Procedure for LOTO Zero Energy Verification in the Above Ranges

1. Identify and locate:
 - a. Power sources and shutoff devices for the equipment to be worked on
 - b. telephones
2. Establish work area:
 - a. Notify affected personnel in vicinity that equipment is going to be LOTO in work area
 - b. Cordon off work area
3. Remove Conductive Apparel
4. Wear the protective equipment specified in the work permit.
5. Review the equipment to be worked on and determine the location of measurements that you plan to make. Remind yourself of the location of potentially energized conductors.
6. Perform Testing using an approved category III or IV multimeter only.
7. De-energize all sources and stored energy devices
 - a. Verify zero energy
 - i. Measurement technique:
 1. Verify meter operates properly on a known power source at the same voltage range
 2. Ground one terminal of tester
 3. Connect to one phase, measure to ground, measure other phases to ground
 4. Remove ground, measure phase to phase for all phases
 5. If possible, use one hand at a time
 6. Verify meter operates properly on a known power source at the same voltage range
8. Lock-out and Tag-out all sources of energy
9. Try to start equipment
10. Stop work if unanticipated conditions exist. Discuss issues with work control coordinator or supervisor to determine if additional controls are required to perform work safely. If you need to leave the work area, do not leave any potentially exposed energized conductors.
11. On completion of work:
 - a. Remove all materials and equipment
 - b. Close enclosures
 - c. Remove barriers
 - d. Notify affected personnel
 - e. Energize equipment
 - f. Advise supervisor or WCC that the work is complete
 - g. If needed, fill in the worker feedback section on permit and forward a copy to the NSLS ESO